

FACTOR Squares

Expand:

① $(2x+1)(2x-1)$

$4x^2 - 2x + 2x - 1$

$$\boxed{4x^2 - 1}$$

$$\downarrow \quad \downarrow$$
$$(2x)^2 - (1)^2$$

② $(4-x)(4+x)$

$16 + 4x - 4x - x^2$

$$\boxed{16 - x^2}$$

$$(4)^2 - (x)^2$$

③ $(x+9)(x-9)$

$x^2 - 9x + 9x - 81$

$$\boxed{x^2 - 81}$$

$$(x)^2 - (9)^2$$

Factor:

④ $49 - y^2$

$$\downarrow \quad \downarrow$$
$$(7)^2 - (y)^2$$

so
$$\boxed{(7+y)(7-y)}$$

⑤ $\boxed{9x^2} - \boxed{16}$

$$\downarrow \quad \downarrow$$
$$(3x)^2 - (4)^2$$

so
$$\boxed{(3x+4)(3x-4)}$$

⑥ $25w^2 - 81$

$$(5w)^2 - (9)^2$$

so
$$\boxed{(5w+9)(5w-9)}$$

⑦ $x^2 - 25$

$$(x)^2 - (5)^2$$

$$\boxed{(x+5)(x-5)}$$

⑧ $4y^2 - 64$

$$(2y)^2 - (8)^2$$

$$\boxed{(2y+8)(2y-8)}$$

⑨ $9 - 4x^2$

$$(3)^2 - (2x)^2$$

$$(3+2x)(3-2x)$$

NOTES: Difference of Squares $\rightarrow \boxed{a^2} - \boxed{b^2}$

★ To factor a difference of squares:

$$\boxed{(a+b)(a-b)}$$

$\hookrightarrow$ (first + second)(first - second)

Lesson 8: Rewriting Quadratic Expressions in Factored Form (Part 3)

Cool Down: Can These Be Rewritten in Factored Form?

Write each expression in factored form. If it is not possible, write "not possible."

$$1. a^2 - 36 = (a)^2 - (6)^2 = (a + 6)(a - 6)$$

$$2. 49 - 25b^2 = (7)^2 - (5b)^2 = (7 + 5b)(7 - 5b)$$

$$3. c^2 + 9 \text{ not a difference of squares}$$

$$4. \frac{100}{81} - 16d^2 = \left(\frac{10}{9}\right)^2 - (4d)^2 = \left(\frac{10}{9} + 4d\right)\left(\frac{10}{9} - 4d\right)$$